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Coal shipment changes discussed in Montana Business Quarterly article

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COAL SHIPMENT CHANGES DISCUSSED
IN MONTANA BUSINESS QUARTERLY ARTICLE

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MISSOULA--

Probable changes in Montana's transportation system as a result of growing coal exports during the next 10 or 15 years are examined in the spring issue of the Montana Business Quarterly by Paul E. Polzin, research associate in the Bureau of Business and Economic Research (BBER) at the University of Montana, Missoula. The MBQ was published Friday, June 17.

Polzin's article, "Transporting Coal from Montana," analyzes the capacities of existing rail lines and discusses an alternate and controversial method--slurry pipelines--not now in existence in Montana. The article is adapted from a report Polzin prepared for the Montana Energy Advisory Council in December 1976.

"The rapid rise in coal production will lead to a corresponding growth in rail traffic. These increases will not occur throughout the state, but will be concentrated on a few lines connecting the mines with the coal-consuming areas," Polzin says. "Regardless of the level of coal production, however, current marketing patterns should continue, with Montana generally shipping to areas north of those served by Wyoming. Montana's existing rail lines are expected to be sufficient to handle the projected increase in the coal traffic.

"The 10,000-ton unit train--100 identical cars each with a capacity of 100 tons--has become a standard for coal shipments from the Northern Great Plains. Using such a train, about 220 round trips per year are required to ship the 2.2 million tons of coal consumed by a 500-megawatt electrical generating plant--a plant roughly half-way between the 330-megawatt Colstrip I and II plants and the proposed 700-megawatt Colstrip III and IV plants," Polzin states.

"Unit trains typically experience turnaround times of one-third to one-fifth the average for conventional trains, and car utilization can reach 80 percent as compared to the nation-wide average of 12 percent for all freight cars. The principal disadvantage of unit trains is that they are usually empty on the return trip," he says.

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"The Burlington Northern currently transports all of Montana's export coal," the author reports. "The major coal-loading points are the Western Energy Company and Peabody Coal Mines served by the Nichols spur west of Forsyth, the Westmoreland Resource Mine along the Hysham line, and the Decker Coal Company situated just north of the Montana-Wyoming border on a branch line from Sheridan, Wyoming."

Polzin says that projected sales to the Upper Midwest suggest that the routes of unit trains through Montana will probably continue in the future. The impact of Montana's transportation systems on new coal-fired generating plants in the Northwest will depend on their exact location. According to Polzin, hauling coal up a gentle slope or downhill is cheaper than climbing a relatively steep grade, which may give an advantage to Wyoming, with a relatively low pass across the continental divide, in transporting coal to southcentral Washington or northcentral Oregon.

Plants in eastern Washington or northern Idaho would probably use Powder River Basin coal shipped via unit trains through Montana. "There are two rail routes from the Powder River Basin coalfields west through Montana," Polzin says. "The first is the old Northern Pacific mainline through Billings, Helena, and Missoula, while the second swings north at Mossmain, Montana, and proceeds through Great Falls and Shelby and then west along the former Great Northern highline. The northern route is longer by about 100 miles, but may be preferable because it has a more gentle slope over the continental divide."

Polzin points out that, everything else being equal, population figures suggest that future shipments of coal from the Northern Great Plains to the Northwest will be only a fraction of the tonnage destined for the Midwest. "It may be 1985 or later before coal shipments to the Northwest grow beyond 1.2 million tons per year," he says.

Coal slurry lines are an often-mentioned alternative for exporting coal from Montana, according to Polzin. In this system, coal is crushed and ground to a consistency similar to sugar. The resulting slurry is pumped through an underground pipeline at about three and one-half miles per hour. Pumping stations are situated at 50- to 100-mile intervals. At its destination, the coal is removed from the water with a filter. The water may be discarded or saved for a future use, such as recycling it into the cooling mechanism of the plant.

"The water requirements of slurry pipelines are a sensitive issue in the semi-arid Northern Great Plains," Polzin says. "A 25-million-ton per year slurry would use about 15,000 acre-feet a year. In comparison, a 750-megawatt coal-fired electrical generating facility, similar to proposed Colstrip Units III and IV, requires about 12,000 to 14,000 acre-feet per year. A recently completed study concluded there is sufficient water in eastern Montana for a moderate level of coal-related development. Therefore, a small number of coal slurries originating in Montana would not by themselves place a significant burden on the region's water supply."

Polzin reports that the railroads oppose slurry lines because they are afraid of losing much of the potential increase in coal traffic if such lines are built.

Other articles appearing in the spring Montana Business Quarterly are "Workers Compensation in Montana," by Thomas O. Kirkpatrick, professor of management in the School of Business Administration at the University of Montana, Missoula; "Worden and Company: Missoula's First General Store," by Dale L. Johnson, archivist at the UM Library; and "Quantitative Methods in Business, Part V: Correlation Analysis," by E. Jeffrey Livingston, associate professor, and John W. Rettenmayer, professor and chairman, in the Department of Management of the UM School of Business Administration.

The Montana Business Quarterly is available by subscription for $6 per year through the Bureau of Business and Economic Research, as well as by individual copy for $2 from the Associated Students' Store at the University of Montana, Missoula, Mont. 59812.

Joyce D. Zacek is MBQ editor for the BBER.

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